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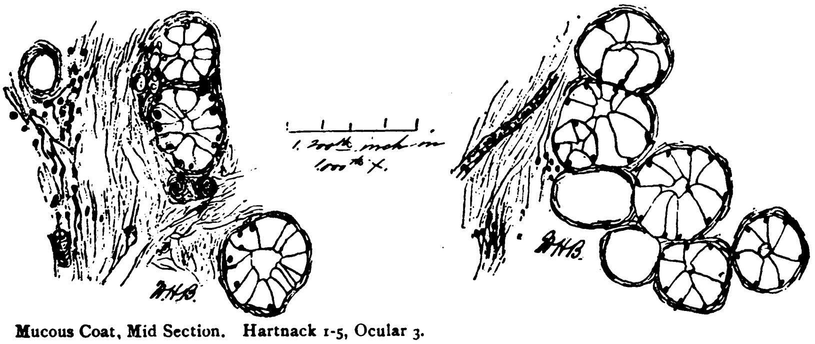
An Account of a Morbid Growth in a Pig's Stomach.

By W. H. Birchmore, M. D., Carbondale, Kan.

The tumor, a description of which I desire to append, came to my hands while investigating the question of embolism in the pig. The results of my studies of it to this present time are before you. The tumor was situated, so to speak, on the back side of the stomach, a half dozen centimeters or more from the pylorus, and was about two centimeters in diameter and raised about one centimeter above the surrounding structure.

Investigating it as I could by the unaided eye, I found that the mucous membrane was adherent to the musculature, the sub-mucous tissue having quite faded away, or more accuratly had been displaced by a rather firm mass, one-half a centimeter in thickness.

Fig. 1,*A* Fig. 1,*B*

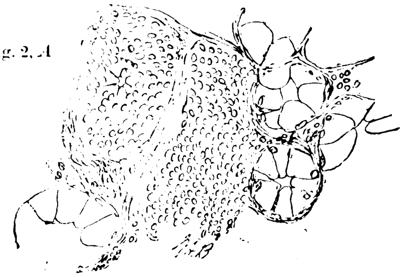


Mucous Coat, Mid Section. Hartnack 1-5, Ocular 3.

The tumor was hardened in chromic acid, and then in alcohol, stained in various ways after sectioning, and the drawings made with the objectives as stated.

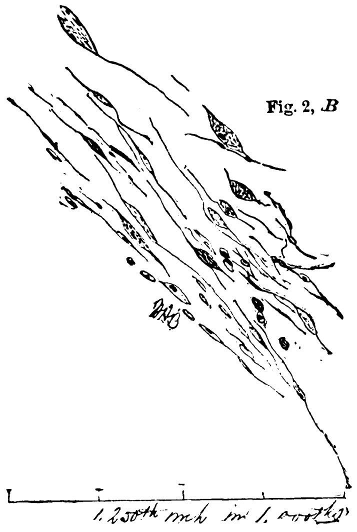
Three distinct structures must be considered in relation to this tumor's origin. First, the changes into the sub-mucous tissue. Second, changes in connective tissue beams. Third, the changes in the neighborhood of the blood vessels.

Fig. 2, A



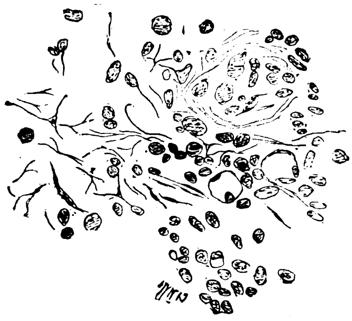
Objective V, Ocular 3.

Fig. 2, B



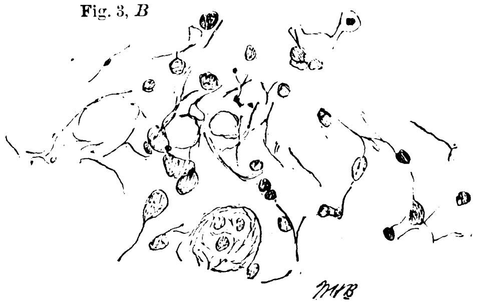
Transition layer sub mucous coat of the Stomach 1-12 in. immersion objective. Ocular 3.

Fig. 3, A



From the same section as Fig. 2. B., same Amplification.

Fig. 3, B



From the same section as Fig. 2. B., same Amplification.

A. Changes in the sub-mucous tissue. These consist in the pouring out into the meshes of the web that lies beneath the mucous coat, proper of a fluid which appeared to be coagulated. Sections magnified as in Fig. 5., showed with a low power the appearance A., and with a high one B.

Fig. 1 shows somewhat diagramatically in B., but with exactitude in A., the relations of the proliferating and other structures in the least pronounced way that could be found among over fifty slides.

The relations of glands, bloodvessels and infiltration depots all show themselves distinctly.

Fig. 2. B., 3. A. and B. and Fig. 4. give details from various parts of this layer of tissues.

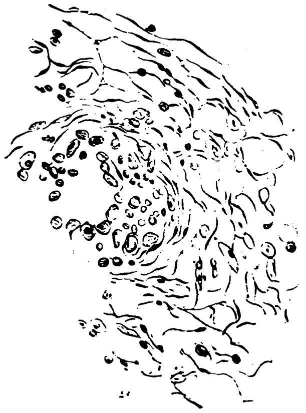


Fig. 4

Objective 1-12, Ocular 2.

B. The changes in the gland structures and the intra and inter glandular tissue are illustrated by the remaining figures.

Fig. 6. shows two infiltration depots with the connective tissue beam from which they take origin between them, the explanation of the figure is appended. The cells forming these depots take origin in the connective tissue beam a.

Fig. 2. A. contains a more highly magnified view of a proliferating center; one series of gland cells has completely disappeared, the space being occupied by bryonic cells, an adjacent one is nearly filled, the central part still being occupied by the gland tissue, while on the other side is to be seen the proliferating beam between two series of cells.

Fig. 7. A. and B. illustrate still further the changes in the connective tissue. The depot whose broken end is shown is completed by the joining of the two arms; but nearer the surface of the mucous membrane, and quite superficial, is a depot 3. m. m. in diameter, surrounded on all sides by connective tissue proliferating towards the center. The right hand sides of the two figures are contiguous, the paper having been reversed in the process of drawing.

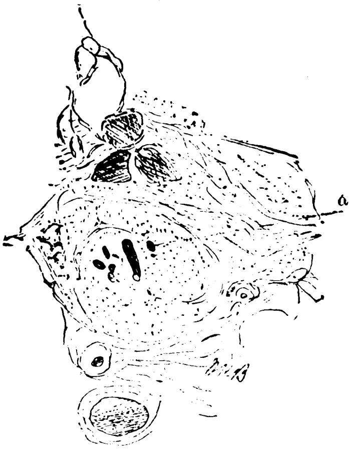


Fig. 5. A

Musculation of the sub-mucous coat, ¾ Objective, Ocular 3.
a, deposit of small cells. See Fig, 5, B.

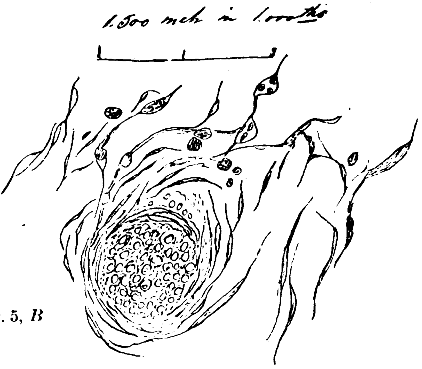
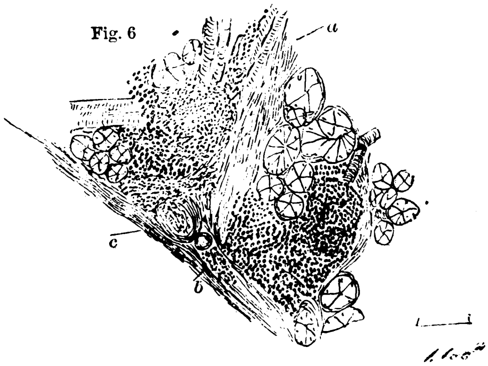


Fig. 5, B

One of the many incipient whorls in the structure immediately surrounding the blood vessels, but *detached* from them.
Objective IX, Ocular 3.

Fig. 6



Centre of infiltration of mucous membrane with proliferating connective tissue cells. Objective IV, Ocular 3.
a, b, partial beam from basis of the intra-glandular connective tissue.
c, occluded blood vessel. With Objective immersion IX, Ocular 5, shows scarce visible points taking stain.

Fig. 8. A. and B. shows the relation to the blood vessels. In both, a small arteriole is seen entering the depot, from which the drawings of fig. 7. were taken, by a connective tissue beam only, but in that proliferating cells could be distinctly seen.

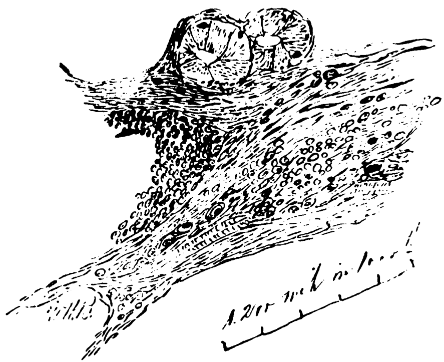
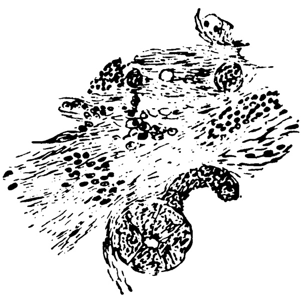


Fig. 7. A

Infiltration of inter follicular tissue and formation of depots.
Objective VII. Ocular 3.

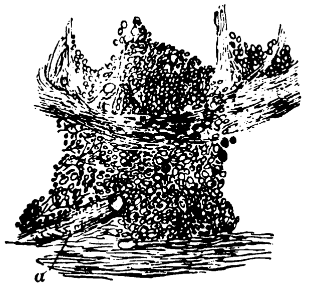
Fig. 7. B



At level of the commencement of the glands.

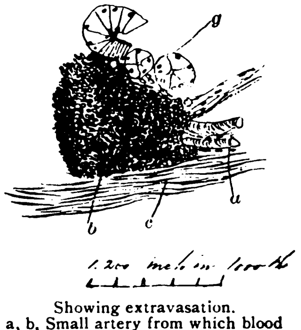
The drawings are all made with comparatively low powers for the greater ease of delineation, but by increasing the magnification, the

Fig. 8, A



Showing infiltration between the muscle and sub-mucous layer.
a, Small Artery.

Fig. 8, B



Showing extravasation.
a, b, Small artery from which blood is extravasated.
c, Sub-mucous connective tissue.
g, Glands cut at various angles.

fact of the multi-nucleation of the cells could be many times demonstrated, and the colorless envelope surrounding the cells in fig. 2. A. was distinctly demonstrable.

An attempt at double staining was only a partial success, but if the effects produced on elements by coloring matters are any evidence of their histological condition, then the utter difference between these cells forming the depots, and the blood elements may be regarded as certain.

Some of the blood vessels show important changes as complete occlusion, by masses of cells that seemed packed together in the lumen, refusing to stain with logwood, but blackening with osmic acid. While on the other side of the vessel's wall the field was fairly blue with logwood-stained cells.

In the lumen of other vessel's cells precisely like the proliferating ones were to be found, so far as staining is evidence; while between them were spaces seemingly clear to a magnification of three hundred and fifty diameters, but were full of stained points to the Im. ix. oc. v. the highest power at my command.

To name this formation is quite beyond my power, I am content to describe and let another give it a name.